

CLAIMS

WHAT IS CLAIMED IS:

- 5 1. An anatomical brace for stabilizing and supporting a uniting pivoting joint situated between a first limb structure and a second limb structure of a living being, the brace comprising:
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a) a first cuff partially encompassable about the first limb structure and a second cuff partially encompassable about
10 the second limb structure; and
b) a pivotable brace joint connecting the first and second cuffs, said brace joint comprising two opposing pivoting assemblies each on one side of the uniting pivoting joint, with each said assembly comprising:
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i) a forward arm member and a rearward arm member in tandem relationship with the forward arm member;
ii) a frame structure having a first end attached to the first cuff and a second end attached to the second cuff; and
iii) a joint extension limiter for regulating pivotal distance of the first and second cuffs in relation to each other.
15 2. An anatomical brace as claimed in Claim 1 wherein the joint extension limiter includes a pivotable distance adjuster.
3. An anatomical brace as claimed in Claim 1 wherein the joint extension limiter is a cable assembly comprising a cable
20 extending from the rearward arm member to the first cuff.
25 4. An anatomical brace as claimed in Claim 3 wherein the cable assembly includes a cable length adjuster for regulating pivotal distance of the first and second cuffs in relation to each other.
30 5. An anatomical brace for stabilizing and supporting a uniting pivoting joint situated between a first limb structure and a second limb structure of a living being, the brace comprising:
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a) a first cuff partially encompassable about the first limb structure and a second cuff partially encompassable about
35 the second limb structure; and
b) a pivotable brace joint connecting the first and second cuffs, said brace joint comprising two opposing pivoting

assemblies each on one side of the uniting pivoting joint, with each said assembly comprising:

- Fig 5a
5 i) a forward arm member having a generally perpendicularly angled first end and a generally perpendicularly angled second end, and a rearward arm member in tandem relationship with the forward arm member, and having a generally perpendicularly angled first end and a generally perpendicularly angled second end;
- Fig 5a → ii) a frame structure having a first end attached to the first cuff and a second end attached to the second cuff, said frame structure having four generally spherical sockets movably positioned within the frame structure such that each spherical socket accommodates one respective perpendicular end of each respective arm member for multi-planar movement between said first and second cuffs; and
- 15 iii) a joint extension limiter for regulating pivotable distance of the first and second cuffs in relation to each other.

6. An anatomical brace as claimed in Claim 5 wherein the joint extension limiter includes a pivotable distance adjuster.
7. An anatomical brace as claimed in Claim 5 wherein the joint extension limiter is a cable assembly comprising a cable extending from the rearward arm member to the first cuff.

8. An anatomical brace as claimed in Claim 7 wherein the cable assembly includes a cable length adjuster for determining pivotable distance of the first and second cuffs in relation to each other.

9. An anatomical brace for stabilizing and supporting a uniting pivoting joint situated between a first limb structure and a second limb structure of a living being, the brace comprising:
- 30 a) a first cuff partially encompassable about the first limb structure and a second cuff partially encompassable about the second limb structure;

- b) a respective cuff retainer for securing each cuff on each respective limb, each said retainer comprising at least one externally accessible releasable connector for attaching and releasing the respective cuff to and from the respective limb structure; and

- c) a pivotable brace joint connecting the first and second

cuffs, said brace joint comprising two opposing pivoting assemblies each on one side of the uniting pivoting joint, with each said assembly comprising:

Fig 9
5 i) a forward arm member and a rearward arm member in tandem relationship with the forward arm member;

Spec 9
→ ii) a frame structure having a first end attached to the first cuff and a second end attached to the second cuff; and

iii) a joint extension limiter for regulating pivotable distance of the first and second cuffs in relation to each other.

10 10. An anatomical brace as claimed in Claim 9 wherein the joint extension limiter includes a pivotable distance adjuster.

11. An anatomical brace as claimed in Claim 9 wherein the joint extension limiter is a cable assembly comprising a cable extending from the rearward arm member ⁸² _{to} ¹⁴ the first cuff.

15 12. An anatomical brace as claimed in Claim 11 wherein the cable assembly includes a cable length adjuster for regulating pivotable distance of the first and second cuffs in relation to each other.

20 13. An anatomical brace for stabilizing and supporting a uniting pivoting joint situated between a first limb structure and a second limb structure of a living being, the brace comprising:

25 a) a first cuff partially encompassable about the first limb structure and a second cuff partially encompassable about the second limb structure;

30 b) a respective cuff retainer for securing each cuff on each respective limb, each said retainer comprising at least one externally accessible releasable connector for attaching and releasing the respective cuff to and from the respective limb structure; and

c) a pivotable brace joint connecting the first and second cuffs, said brace joint comprising two opposing pivoting assemblies each on one side of the uniting pivoting joint, with each said assembly comprising:

35 i) a forward arm member having a generally perpendicularly angled first end and a generally perpendicularly angled second end, and a rearward arm member in tandem relationship with the forward arm member and having a generally perpendicularly angled

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first end and a generally perpendicularly angled second end;

ii) a frame structure having a first end attached to the first cuff and a second end attached to the second cuff, said frame structure having four generally spherical sockets movably positioned within the frame structure such that each spherical socket accommodates one respective perpendicular end of each respective arm member for multi-planar movement between said first and second cuff; and

10 iii) a joint extension limiter for regulating pivotable distance of the first and second cuffs in relation to each other.

14. An anatomical brace as claimed in Claim 13 wherein the joint extension limiter includes a pivotable distance adjuster.

15. An anatomical brace as claimed in Claim 13 wherein the joint extension limiter is a cable assembly comprising a cable extending from the rearward arm member to the first cuff.

16. An anatomical brace as claimed in Claim 15 wherein the cable assembly includes a cable length adjuster for regulating pivotable distance of the first and second cuffs in relation to each other.

20 17. An anatomical brace for stabilizing and supporting a uniting pivoting joint situated between a first limb structure and a second limb structure of a living being, the brace comprising:

25 a) a first cuff partially encompassable about the first limb structure and a second *cuff* partially encompassable about the second limb structure;

b) at least one tensioning shaft member integral with each cuff; and

30 c) a pivotable brace joint connecting the first and second cuffs, said brace joint comprising two opposing pivoting assemblies each on one side of the uniting pivoting joint, with each said assembly comprising:

i) a forward arm member and a rearward arm member in tandem relationship with the forward arm member;

35 ii) a frame structure having a first end attached to the first cuff and a second end attached to the second cuff; and

iii) a joint extension limiter for regulating pivotable distance of the first and second cuffs in relation to each other.

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18. An anatomical brace as claimed in Claim 17 wherein the joint extension limiter includes a pivotable distance adjuster.

19. An anatomical brace as claimed in Claim 17 wherein 5 the joint extension limiter is a cable assembly comprising a cable extending from the rearward arm member to the first cuff.

20. An anatomical brace as claimed in Claim 19 wherein 10 the cable assembly includes a cable length adjuster for regulating pivotable distance of the first and second cuffs in relation to each other.

21. An anatomical brace for stabilizing and supporting a uniting pivoting joint situated between a first limb structure and a second limb structure of a living being, the brace comprising: 12

a) a first cuff partially encompassable about the first limb structure and a second cuff partially encompassable about the second limb structure; 20

b) at least one tensioning shaft member integral with each cuff; and

20 c) a pivotable brace joint connecting the first and second cuffs, said brace joint comprising two opposing pivoting assemblies each on one side of the uniting pivoting joint, with each said assembly comprising:

i) a forward arm member having a generally perpendicularly angled first end and a generally perpendicularly angled second end, and a rearward arm member in tandem relationship with the forward arm member and having a generally perpendicularly angled first end and a generally perpendicularly angled second end;

ii) a frame structure having a first end attached to the first cuff and a second end attached to the second cuff, said frame structure having four generally spherical sockets movably positioned within the frame structure such that each spherical socket accommodates one respective perpendicular end of each respective arm member for multi-planar movement between said first and second cuff; and

iii) a joint extension limiter for regulating pivotable distance of the first and second cuffs in relation to each other.

22. An anatomical brace as claimed in Claim 21 wherein the

joint extension limiter includes a pivotable distance adjuster.

23. An anatomical brace as claimed in Claim 21 wherein the joint extension limiter is a cable assembly comprising a cable extending from the rearward arm member to the first cuff.

5 24. An anatomical brace as claimed in Claim 23 wherein the cable assembly includes a cable length adjuster for regulating pivotable distance of the first and second cuffs in relation to each other.